ERS Report Summary

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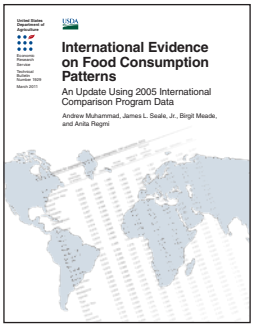

This is a summary of an ERS report.

Find the full report at ***www.ers.usda.gov/publications/tb1929***

International Evidence on Food Consumption Patterns

An Update Using 2005 International Comparison Program Data

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In a 2003 report, *International Evidence on Food Consumption Patterns*, ERS and collaborating economists estimated income and price elasticities of demand for broad consumption categories—such as food, clothing, education, and other goods—and for food categories such as cereals, meats, and dairy across 114 countries using 1996 International Comparison Program (ICP) data. These elasticities measure the degree to which consumption changes when prices or incomes change. The estimates have been widely used in economic models such as the USDA's Baseline model, the Global Trade Analysis Project (GTAP) model, and the International Food Policy Research Institute's IMPACT model. This report updates that analysis with a similar two-stage demand system using 2005 ICP data.

What Is the Issue?

An understanding of food demand and food trends across countries and the ability to predict potential shifts in demand for different food products are invaluable tools. The most prominent measures of food consumption behavior are income and price elasticities. A number of studies have estimated income and price elasticities using 1996 ICP data and data from years prior. However, advances in ICP data collection since 1996 should lead to better results and more accurate income and price elasticity estimates. Furthermore, the most recent ICP data (2005) include a greater number of countries, like developing countries in Sub-Saharan Africa, as well as China and India.

What Did the Study Find?

- Low-income countries allocate a greater portion of additional income to food. As countries become more affluent, more is allocated to luxury categories like recreation. For instance, a dollar increase in income would cause food expenditures in the Democratic Republic of Congo to increase by 63 cents, but only by 6 cents in the United States. In contrast, recreation expenditures in the Democratic Republic of Congo would not increase at all, while in the United States recreation expenditures would increase by 13 cents with an additional dollar of income.

- The share of total budget allocated to housing is lowest in low-income countries and fairly similar in middle- and high-income countries, while the budget share on house furnishings is fairly similar across all income groups. Spending on health clearly rises with income, from 4.5 percent of the average household budget in low-income countries to 8.9 percent in high-income countries.
- The income elasticity of demand for food varies greatly among countries and is highest among low-income countries, where it varies from 0.85 for the Democratic Republic of Congo to 0.71 for Tunisia. It ranges between 0.71 to 0.57 for middle-income countries, and from 0.56 to 0.35 for high-income countries. The average income elasticity for low-income countries is 0.78, over 1.5 times the average for high-income countries.
- With affluence, the portion of additional food expenditures allocated to cereals and other staples decreases. For instance, a dollar increase in food expenditures results in cereal expenditures in the Democratic Republic of Congo increasing by 31 cents. By contrast, cereal expenditures in the United States would actually decrease by 2 cents, indicating the lower status afforded this food category by most consumers in rich countries.
- The own-price elasticities (holding marginal utility of income constant) for the food subcategories vary by affluence according to economic theory; low-income countries are more responsive to price changes compared with higher-income countries. For instance, the own-price elasticity value for breads and cereals ranges from -0.50 for the Democratic Republic of Congo to near zero for the United States.
- Overall, low-income countries are more responsive to changes in income and food prices and, therefore, make larger adjustments to their food consumption pattern when incomes and prices change.
- Unlike previous ICP data, restaurant and catering expenditures are included among food in the 2005 data. Consequently, our estimates of the income elasticity of demand for food in high-income countries are larger than the estimates in Seale et al. (2003, derived using 1996 ICP data). We find that the average income elasticity for high-income countries is 0.50, while Seale et al. found it to be 0.34.

How Was the Study Conducted?

We estimate a two-stage demand system using 2005 ICP data. We analyze demand across 144 countries. The first stage involves estimating an aggregate demand system using the Florida-Preference Independence model across nine broad consumption categories: food—which includes food prepared and consumed at home, food away from home, and beverages and tobacco—clothing and footwear, education, housing, house furnishings and operations, medical care, transportation and communications, recreation, and other expenditures. The second stage of the analysis involves a second demand system using the Florida-Slutsky model to estimate demand across eight food subcategories: bread and cereals, meat, fish, dairy products, fruits and vegetables, oils and fats, beverages and tobacco, and other food products. Estimates are used to derive income and price elasticities of demand for broad consumption categories and food categories by country.